

A NEW GENUS OF ENDASEINE ICHNEUMONIDAE
FROM AUSTRALIA (HYMENOPTERA)

I. D. Gauld

Department of Entomology, British Museum (Natural History)
London, U.K.

G. A. Holloway

Department of Entomology, Australian Museum
Sydney, Australia

Abstract

A new endaseine genus, *Tryonocryptus*, and three new species, *T. nigradorsalis* (the type-species), *T. gigas* and *T. amicus*, are described from Australia. *Meringops* Townes, a genus previously known only from South America, is newly recorded from Australia and a key is given to separate these two genera. The systematic and zoogeographical relationships of the Australian endaseines are discussed.

INTRODUCTION

The subtribe Endaseina is one of the most distinctive groups of Phygadeuontinae (= Gelinae). They are rather stout ichneumonids with short spinose tibiae and, although little is known of their biology, their stout legs suggest they search for hosts amongst leaf litter and in the soil. A few species have been reared from cocoons of Lepidoptera and Symphya and one Nearctic species parasitizes dytiscid pupae. The majority of endaseines are restricted to cooler humid areas. Most species occur in the north temperate region and montane South America, though a few species are known from mountains in South East Asia (Townes 1970).

A recent study of Australian ichneumonids has revealed that two endaseine genera occur on the continent. One, *Meringops*, was previously only known from Chile, whilst the other, herein newly described, is strikingly different from all known endaseines.

Subtribe ENDASEINA

This subtribe may be recognized with Townes' (1970) key. Some confusion may occur with the subtribe Mastrina but the two are easily separated by the shape of the scape. That of endaseines is almost transversely truncate, whereas that of mastrines is very obliquely truncate. Mastrines also have more slender legs, the tibiae are not densely spinose and the central antennal segments of females are usually elongate, not quadrate or transverse as in most endaseines.

KEY TO ENDASEINE GENERA OCCURRING IN AUSTRALIA

Mandibles slightly tapered with lower tooth slightly shorter than the upper;
clypeus with apex simply arcuate, without a median tooth or tubercle;
upper valve of ovipositor elongately tapered to an acute point
. **Meringops** Townes

Mandibles distally flared, with lower tooth distinctly the longer; clypeus with a median apical tooth or tubercle; upper valve of ovipositor bluntly rounded at apex **Tryonocryptus**, n. gen.

Genus **MERINGOPS** Townes

Meringops Townes, 1970. Mem. Amer. Ent. Inst. 12: 80.

Type-species: Meringops minipes Townes, by original designation.

This small genus is known from a single Chilean species. Three further undescribed species occur in Australia. These species agree well with the generic description given by Townes (1970: 80) except that the fore wing length should now have a range 4.0 - 6.5 mm.

The Australian species all occur in the cooler, more humid south-eastern part of the continent. They form a compact species-group and are clearly closely related to the Chilean species. This type of trans-Antarctic relationship is fairly uncommon amongst Ichneumonidae, but it is not entirely unknown. The labenine genera *Certonotus*, *Labium* and *Labena* are virtually restricted to South America and Australia (Gauld 1983) and the mesostenine genus *Anacis* is rich in species in both Chile and south-eastern Australia. It is thought that these genera dispersed across the Antarctic continent before the Eocene when the archipelagic connection between Australia and South America was finally severed as Australia moved northwards. In the Oligocene and earlier, the South Polar region is thought to have had a warmer climate than today and there is evidence to suggest the existence of extensive *Nothofagus* and southern conifer forests on Antarctica (Rich 1975). It is noteworthy that even today many of the southern elements in the Australian fauna are centered in cool temperate forests (Naumann 1982).

Genus **TRYONOCRYPTUS**, new genus

Type-species: Tryonocryptus nigridorsalis, n. sp. (Fig. 1)

Fore wing length 10-18 mm; head large, body stout; head, alitrunk and legs (especially of female) densely pubescent. Eye surface with minute inconspicuous hairs. Clypeus wide, fairly flat, with a strong median apical tooth or tubercle, margin blunt. Mandibles stout, distally flared, with lower tooth conspicuously the longer. Flagellum of female short, stout, with central segments transverse, that of male more slender, without tyloids; flagellum of both sexes with a white band. Mesoscutum polished, punctate with notauli vestigial; scuto-scutellar groove wide, simple; scutellum weakly convex, without lateral carinae. Mesopleuron with sternaulus short, shallow. Propodeum abruptly declivous, with anterior and often posterior transverse carinae discernible, usually close together; median longitudinal carinae absent. Fore wing with 3r-m present enclosing a fairly large pentagonal areolet; 2m-cu with one or two bullae; postero-distal corner of second discal cell obtuse. Hind wing with distal abscissa of Cu₁ present; first abscissa of Cu₁ shorter than cu-a. Gaster with tergite 1 slender anteriorly, posteriorly evenly broadened, dorsally flat, without median longitudinal carinae; apex of first sternite just before spiracle. Tergites 2-4 polished, virtually impunctate, with laterotergites folded under but not separated by a crease. Female subgenital plate large; ovipositor

projecting beyond apex of gaster by 0.7 - 1.6 times length of hind tibia, slightly decurved and with upper valve deep, apically abruptly and bluntly rounded.

Tryonocryptus occupies an isolated position within the Endaseina, differing from all described genera in the form of the mandibles, the medianly protuberant clypeus and the stout ovipositor. The majority of endaseines share two apomorphic features - a transverse membranous suture at the hind margin of the mesoscutum and a median longitudinal ridge dividing the scuto-scutellar groove into two halves. These features are absent in *Tryonocryptus* though there is a trace of the suture laterally in some specimens and a slight median thickening of the scuto-scutellar groove in a few individuals. Of the five genera without these apomorphies three, *Grasseiteles*, *Charitopes* and *Cisaris*, are morphologically specialized, but two, *Meringops* and *Medophron*, are both closely related and structurally unspecialized. It is possible that *Tryonocryptus* is related to these two genera, but at present no convincing synapomorphies have been found to confirm this relationship.

KEY TO SPECIES OF TRYONOCRYPTUS

1. Clypeal margin sinous, with weak lateral lobes and a median truncated tooth (Fig. 2); mesoscutum black with scutellum ivory marked; ovipositor projecting beyond apex of gaster by 0.7 - 0.9 times length of hind tibia 1. *nigridorsalis*, n. sp.
Clypeal margin convex with a large rounded median tubercle (Fig. 3); mesoscutum and scutellum reddish; ovipositor projecting beyond apex of gaster by 1.2 or more times length of hind tibia 2
2. Ovipositor projecting beyond apex of gaster by 1.5 - 1.6 times length of hind tibia; mesoscutal punctures obsolescent; large species, fore wing length 15 - 18 mm; Victoria/New South Wales 2. *gigas* n. sp.
Ovipositor projecting beyond apex of gaster by 1.2 - 1.3 times length of hind tibia; mesoscutal punctures fine but deep; medium sized species, fore wing length 12 - 14 mm; Queensland 3. *amicus* n. sp.

1. *Tryonocryptus nigridorsalis*, n. sp. (Figs. 1-2)

Fore wing length 10 - 12 mm. Mandibles stout, the lower tooth 2.0 times the length of the upper; clypeus transverse, with margin sinuate, with weak lateral lobes (weaker in male than female) and with a truncate median apical tooth. Flagellum of female short and stout, with 24 - 26 segments, with a white band on about segments 12 - 22, those of male more slender with about 30 segments and with white band on segments 13 - 18. Frons polished, sparsely punctate, with fewer shorter hairs than face and genae. Mesoscutum polished, punctate; notauli indistinguishable. Mesopleuron polished, punctate, speculum without punctures; sternaulus barely discernible, extending less than 0.4 of length of pleuron. Propodeum polished, sparsely punctate; anterior transverse carina present, medially curved forwards; posterior transverse carina present at least as low lateral keels, when present medially then close to and parallel with anterior carina. Fore wing with areolet often slightly higher than broad; 2m-cu with two bullae, angled between them and sometimes with a stub of spurious vein present. Ovipositor projecting beyond apex of gaster by 0.7 - 0.9 times length of hind tibia.

Head black; mandibles except teeth, clypeus except apical margin, face, genae, spot on vertex extending to upper inner orbits and a spot on the temporal orbit, ivory. Pronotum black, near hind corner, ivory; mesoscutum black, scutellum ivory. Mesopleuron variable, from black to reddish brown, propodeum similarly colored; metanotum black with postscutellum ivory. Gaster reddish brown, but with tergite 1 black from base to spiracle. Ovipositor valves black. Legs reddish brown, hind leg with distal three tarsal segments white.

Holotype: F, New South Wales: Blue Mts, Mt Tomah, iii. 79 (N.W. Rodd) (AM). *Paratypes*: Australian Capital Territory: 1 F, Black Mt, xi. 79 (D. Colless) (ANIC). New South Wales: 1 M, Blue Mts, Mt Tomah, iii. 79 (N.W. Rodd) (AM); 1 F, Ben Lomond, ii. 30 (NMV); 1 F, Cabramatta, x. 63 (M. I. Nikitin) (BMNH); 1 M, Clarence, iii. 79 (n. W. Rodd) (AM); 2 M, Jindabyne, ii. 69 (A. Neboiss) (NMV). Queensland: 1 M, Brisbane, ix. 12 (H. Hacker) (QM); 1 F, Brisbane, ix. 56 (A. N. Burns) (NMV); 1 M, Mackay (R. E. Turner) (BMNH); 1 F, M'borough, xii. 53 (Barrie) (QUM). Victoria: 1 M, Belgrave, iii. 49 (A. N. Burns) (NMV); 1 F, Dartmouth Survey, Eight Mile Creek, iv. 53 (NMV); 2 F, 5 M, Fernshaw, i-iii. 55 (A. N. Burns) (NMV); 1 M, Ferntree Gully, xi. 31 (A. N. Burns) (NMV); 1 M, Kallista, iv. 54 (A. N. Burns) (NMV); 2 M, 12 km SE of Merrijig, xi. 71 (A. Neboiss) (NMV); 1 M, Millgrove, iii. 54 (A. N. Burns) (NMV); 1 M, Mt Hotham, iii. (TC); 1 F, Whisky Flat, i. 46 (A. N. Burns) (NMV); 1 M, Won-Won, ii. 52 (A. Neboiss) (NMV).

2. *Tryonocryptus gigas*, n. sp. (Fig. 3)

Fore wing length 15-18 mm. Mandibles stout, with lower tooth about 2.0 times as long as the upper; clypeus transverse, margin convex with a rounded median apical tubercle and no indication of lateral lobes. Flagellum of female short and stout, with about 28 segments and with white band on segments 13-22, those of male more slender, with 31 segments and with white band on segments 13-19. Frons polished, sparsely punctate, with fewer shorter hairs than face and genae. Mesoscutum polished, punctures obsolescent, notauli very weak but indicated almost to posterior margin. Mesopleuron polished, punctate, speculum smooth; sternaulus vestigial. Propodeum polished, with anterior and posterior transverse carinae present, the former angled slightly forwards medially, the latter high laterally, absent centrally or if indicated closely parallel to anterior carina. Fore wing with areolet broader than high; 2m-cu with one bulla or two very close. Ovipositor projecting beyond apex of gaster by 1.5-1.6 times length of hind tibia.

Head black; mandibles except teeth, clypeus except apical margin, face except for a median longitudinal area, genae to temporal orbits and inner orbits from face to vertex ivory. Antennae, except for white band, black. Alitrunk and gaster reddish brown, upper hind corner of pronotum ivory. Ovipositor valves black. Legs reddish brown, hind leg with distal three tarsal segments whitish.

Holotype: F, New South Wales: Blue Mts, Mt Tomah, xi. 77 (N. W. Rodd) (AM). *Paratypes*: New South Wales: 1 F, Blue Mts, Mt Bell, xii. 81 (N. W. Rodd) (AM); 1 F, 9 miles S of Hampton, ii. 63 (Chinnick and Lewis) (ANIC); 1 F, Jindabyne, ii. 69 (A. Neboiss) (NMV); 1 M, Tubrabucca, xii. 46 (A. N. Burns) (NMV). Victoria: 1 F, Blackburn V., ii. 46 (A. N. Burns) (NMV);

F = female. M = male.

6 F, 1 M, Deer Park, ex *Entometa apicalis* (Walker) (Lep., Lasiocampidae), ix-x. 47 (A. N. Burns) (NMV); 1 F, Ferntree Gully, iii. 31 (A. N. Burns) (NMV); 1 M, Kallista, xii. 47 (A. N. Burns) (NMV); 1 F, Nowa Nowa, ii. 52 (A. N. Burns) (NMV); 1 F, Victoria (NMV); 1 M, Victoria (BMNH).

3. *Tryonocryptus amicus*, n. sp.

Similar to *T. gigas* except for the following: fore wing length 11-14 mm; mandibles with lower tooth about 1.5 times as long as the upper; female flagellum with 24-26 segments, white band on segments 11-20, that of male with about 28 segments, white band on segments 11-19. Mesoscutum with notauli barely discernible, centrally with fine deep punctures; sternaulus short. Fore wing with two bullae in 2m-cu. Ovipositor projecting beyond apex of gaster by 1.2-1.3 times length of hind tibia.

Coloration as *T. gigas* except that the facial mark is reddish brown and indistinct and the ivory mark on the temporal orbit is absent. The entire alitrunk and gaster is reddish or yellowish brown.

Holotype: F, Queensland: Bundaberg, Baldwin Swamp, iv. 72 (H. Frauca) (ANIC). *Paratypes*: Queensland: 4 M, same data as holotype (ANIC); 1 M, Biggenden, Coastal Range, v. 74 (H. Frauca) (ANIC); 1 F, Brisbane, v. 11 (QM); 1 F, Brisbane, ix. 20 (H. Hacker) (QM); 1 F, Mt Tambourine, x. 78 (Galloway) (BMNH); 1 M, Wybera, xi. 69 (E. C. Dahms) (QM).

ACKNOWLEDGMENTS

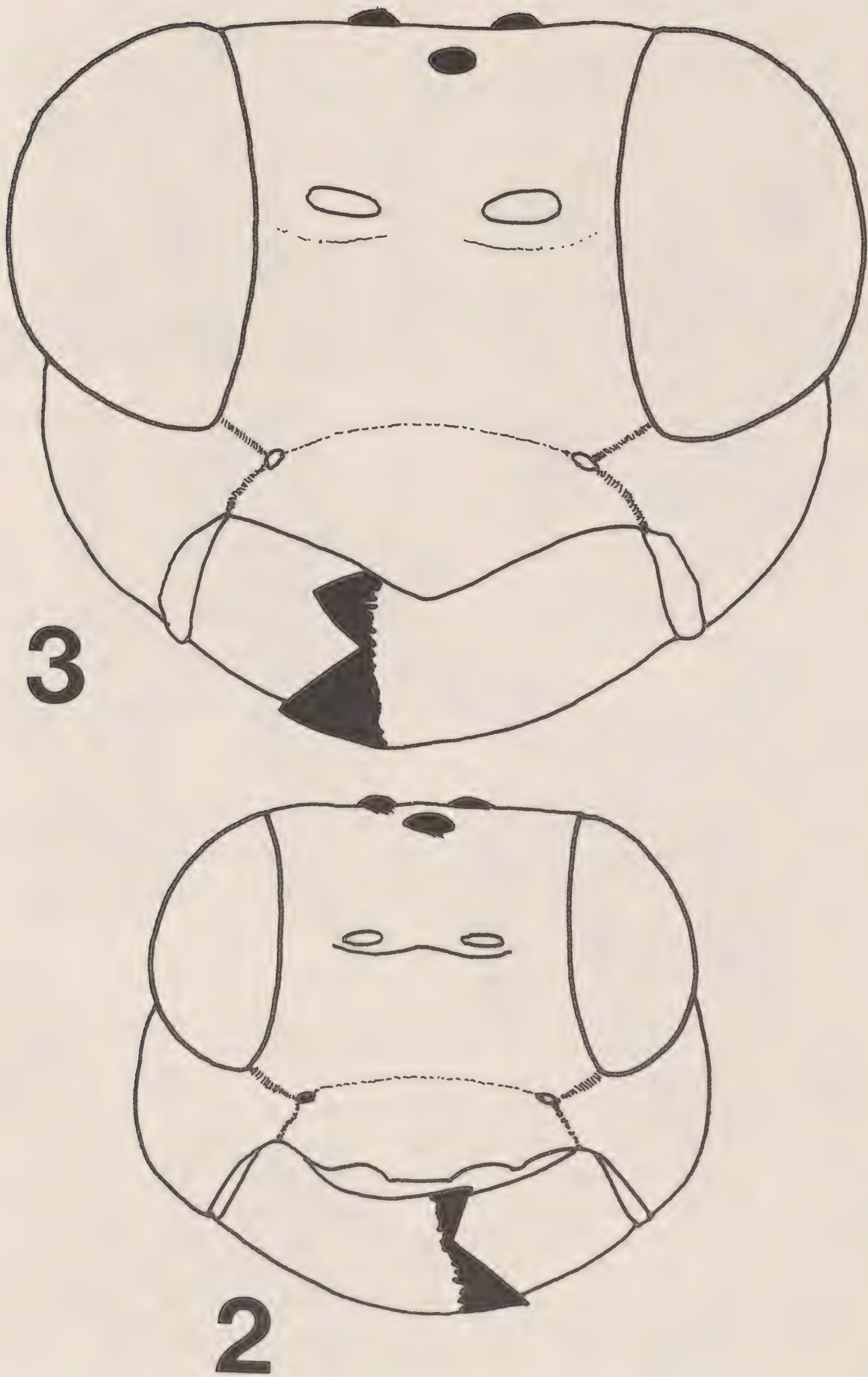
We would like to thank Dr. H. Townes for his comments on the placement of these Australian species. We are grateful to Dr. E. C. Dahms, Queensland Museum, Brisbane (QM), Dr. I. D. Naumann, Australian National Insect Collection, Canberra (ANIC), Dr. H. Townes, American Entomological Institute, Ann Arbor (TC) and Dr. K. Walker, National Museum of Victoria, Melbourne (NMV) for the loan of valuable specimens. Part of this work was undertaken whilst I. D. Gauld was in receipt of an ABRS grant and thanks are due to the Australian Government for this. Jonathan Carter drew Figure 1.

REFERENCES

- Gauld, I. D. 1983. The phylogeny of the Labeninae, an ancient southern group of Ichneumonidae. *Syst. Ent.* 8:
- Naumann, I. D. 1982. Systematics of the Australian Ambositrinae (Hymenoptera: Diapriidae), with a synopsis on non-Australian genera of the subfamily. *Aust. J. Zool. Suppl. Ser.* 85: 1-239.
- Rich, P. V. 1975. Antarctic dispersal routes, wandering continents, and the origin of Australia's non-passeriform Avifauna. *Mem. Natl. Mus. Victoria* 36: 63-126.
- Townes, H. 1970. Genera of Ichneumonidae. 2. *Mem. Amer. Ent. Inst.* 12: 1-537.



Fig. 1, *Tryonocryptus nigridorsalis*, female, lateral view of the whole insect.



Figs. 2-3. Head showing face: 2, *Tryonocryptus nigradorsalis*, female. 3, *T. gigas*, female.